

# **STRUCTURE AND MANUFACTURING METHOD FOR NITRIDE-BASED LIGHT-EMITTING DIODES**

## **ABSTRACT OF THE DISCLOSURE**

A method for manufacturing GaN-based light-emitting diode (LED) is provides with the following steps of: providing a substrate; forming a GaN semiconductor epitaxy layer on the substrate, the GaN semiconductor epitaxy layer further including an n-type GaN contact layer, a light-emitting layer and a p-type GaN contact layer; forming a digital penetration layer on the p-type GaN contact layer; using a mutli-step dry etching method to etch the digital penetration layer, the p-type GaN contact layer, the light-emitting layer to form an n-metal forming area, etching terminating at the light-emitting layer; forming a first ohmic contact electrode on the digital penetration layer for said p-type ohmic contact layer and a second ohmic contact electrode on the n-metal forming area for said n-type ohmic contact layer; and finally, forming pads on both said first ohmic contact electrode and said second ohmic contact electrode.